



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D5110-1
Job Sheet 188612



Part No: D5110-1

Job Qty: 12 pcs

Part Name: Swivel Nut Fitting



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 1/11/19

Job Tracking No:

Due Date: 2/25/19

Created By: Chantal Lavoie

Type: Stock

Description:

Note: DWG REV B IPP REV:A 14.06.18 AS PER DWG REV:A DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier Lead Time	
100	Purchasing	12 pcs	2/25/19	2/25/19	0.00	0.00	Purchasing - 1	JAN 31 2019
							Purchasing - 2	
							Purchasing - 3	
110	Packaging 2-1 - Receive - B4B	12 pcs	2/25/19	2/25/19	0.00	0.00	Packaging 2 - 1 - B4B	JAN 31 2019
							Packaging 2 - 2 - B4B	
							Packaging 2 - 3 - B4B	
							Packaging 2 - 5 - B4B	
							Packaging 2 - 4 - B4B	
							Packaging 2 - 6 - B4B	
							Packaging 2 - 7 - B4B	
							Packaging 2 - 8 - B4B	
							Packaging 2 - 9 - B4B	
							Packaging 2 - 10 - B4B	
							Packaging 2 - 11 - B4B	
							Packaging 2 - 12 - B4B	
							Packaging 2 - 13 - B4B	
							Packaging 2 - 14 - B4B	
							Packaging 2 - 15 - B4B	
							Packaging 2 - 16 - B4B	
							Packaging 2 - 17 - B4B	
							Packaging 2 - 18 - B4B	
							Packaging 2 - 19 - B4B	
							Packaging 2 - 20 - B4B	
							Packaging 2 - 21 - B4B	
							Packaging 2 - 22 - B4B	
							Packaging 2 - 23 - B4B	
							Packaging 2 - 24 - B4B	
							Packaging 2 - 25 - B4B	
							Packaging 2 - 26 - B4B	
							Packaging 2 - 27 - B4B	
							Packaging 2 - 28 - B4B	



Container No: S149881



Part: D5110-1

Job No: 188612

Serial No/Batch: S149881

Revision: B

Inspector:

Exp Date:

Instructions: Various STC's

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 01/31/19

					Packaging 2 - 29 - B4B	
					Packaging 2 - 30 - B4B	
					Packaging 2 - 31 - B4B	
					Packaging 2 - 32 - B4B	
					Packaging 2 - 33 - B4B	
					Packaging 2 - 34 - B4B	
					Packaging 2 - 35 - B4B	
					Packaging 2 - 36 - B4B	
120 QC 6	12 pcs	2/25/19	0.00 0.00	QC 6 - 38		
				QC 6 - 42		
				QC 6 - 9		
				QC 6 - 68		
				QC 6 - 61		
121 HAAS 5 Axis - B4B	12 pcs	2/25/19	0.07 3.34	HAAS - 5 - B4B		
123 QC 8	12 pcs	2/25/19	0.00 0.00	QC 8 - 12		
				QC 8 - 14		
				QC 8 - 17		
				QC 8 - 20		
				QC 8 - 25		
				QC 8 - 3		
				QC 8 - 32		
				QC 8 - 33		
				QC 8 - 35		
				QC 8 - 38		
				QC 8 - 39		
				QC 8 - 4		
				QC 8 - 44		
				QC 8 - 45		
				QC 8 - 49		
				QC 8 - 58		
				QC 8 - 8		
				QC 8 - 9		
				QC 8 - 68		
				QC 8 - 67		
QC 8 - 1 (A)						
130 Packaging 3-1 - Stock - B4B	12 pcs	2/25/19	0.00 0.00	Packaging 3 - 1 - B4B		
				Packaging 3 - 2 - B4B		
				Packaging 3 - 3 - B4B		
				Packaging 3 - 4 - B4B		
				Packaging 3 - 5 - B4B		
				Packaging 3 - 6 - B4B		
				Packaging 3 - 7 - B4B		
				Packaging 3 - 8 - B4B		
				Packaging 3 - 9 - B4B		
				Packaging 3 - 10 - B4B		
				Packaging 3 - 11 - B4B		
				Packaging 3 - 12 - B4B		
				Packaging 3 - 13 - B4B		
				Packaging 3 - 14 - B4B		
				Packaging 3 - 15 - B4B		
				Packaging 3 - 16 - B4B		
				Packaging 3 - 17 - B4B		
				Packaging 3 - 18 - B4B		
				Packaging 3 - 19 - B4B		
				Packaging 3 - 20 - B4B		
				Packaging 3 - 21 - B4B		
				Packaging 3 - 22 - B4B		
				Packaging 3 - 23 - B4B		
				Packaging 3 - 24 - B4B		
					Plex 1/31/19 11:59 AM Dart.Hadley.Shannon	

DAS
FEB 14 2019 68
9-89
11 19-02-14

B.P 19-02-23

				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	ST142 81 FEB 26 2019
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	DAG
140 QC 21 - SA	12 pcs	2/25/19	0.00 0.00	QC 21 - SA - 21	21
				QC 21 - SA - 70	9-99

Part Op **100** - Purchasing - Issue PO _____ Wainbee Purchase part #: 12 C6X SS Possible supplier: PARKER
 Descriptions: HANNIFIN Certificate of conformity is required
110 - Receive & Inspect for Damage & Mat'l Certs - Certificate of conformity is required.
120 - QC6- All purchased or subcontracted products
121 - HAAS CNC vertical machine #5 - DRILL LOCK WIRE HOLES AS PER DWG AND FOLIO FB490 FOLIO
 REV: _____ DWG REV: _____ DEBURR
123 - QC8- Inspect parts - second check
130 - Identify as per dwg & Stock Location: _____
140 - QC21- Final Inspection - Work Order Release

PO Details

Aviall (avi002-vu)

 PO No: PO042310
 Line No: 1

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
12 C6X SS	Swivel Nut Fitting D5110-1	12 pcs (1 ea)	100-Purchasing	416905 5149888 JK.

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	12 C6X SS	12	0	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Swivel Nut Fitting	0.280Inches ± 0.030	0.310 0.250		
2	Swivel Nut Fitting	0.063Inches + 0.004 - 0.001	0.067 0.062	Diameter	
3	Swivel Nut Fitting	0.607Inches ± 0.010	0.617 0.597		



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D5110-1**Job Sheet 188612****Part No:** D5110-1**Job Qty:** 12 ea**Part Name:** Swivel Nut Fitting**Part Weight:** 0 lbs**Status:** New**Priority:** Medium**Job Created:** 1/11/19**Job Tracking No:****Due Date:** 2/25/19**Created By:** Chantal Lavoie**Type:** Stock**Description:****Note:** DWG REV B IPP REV:A 14.06.18 AS PER DWG REV.A DD VERF:JLM**Ship Via:****Bill of Materials****Job Routing**

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Purchasing	12 pcs		2/25/19	0.00	0.00	Purchasing		
110	Packaging	12 pcs		2/25/19	0.00	0.00	Packaging2		
120	QC	12 pcs		2/25/19	0.00	0.00	QC6		
121	CNC Vertical Machining	12 pcs		2/25/19	0.07	3.34	HAAS 5 Axis		
123	QC	12 pcs		2/25/19	0.00	0.00	QC8		
130	Packaging	12 pcs		2/25/19	0.00	0.00	Packaging3-2		
140	QC21-SA	12 Ea		2/25/19	0.00	0.00	QC21		

Part Op **100** - Issue PO 42310 Wainbee Purchase part #: 12 C6X SS Possible supplier: PARKER HANNIFIN
 Descriptions: Certificate of conformity is required
110 - Certificate of conformity is required.
121 - DRILL LOCK WIRE HOLES AS PER DWG AND FOLIO FB490 FOLIO REV: _____ DWG REV: _____
 DEBURR

PO Details

Aviall (avi002-vu)



PO No: PO042310
Line No: 1

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JAN 17 2019 212

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
12 C6X SS	Swivel Nut Fitting D5110-1	12 pcs (1 ea)	100-Purchasing	

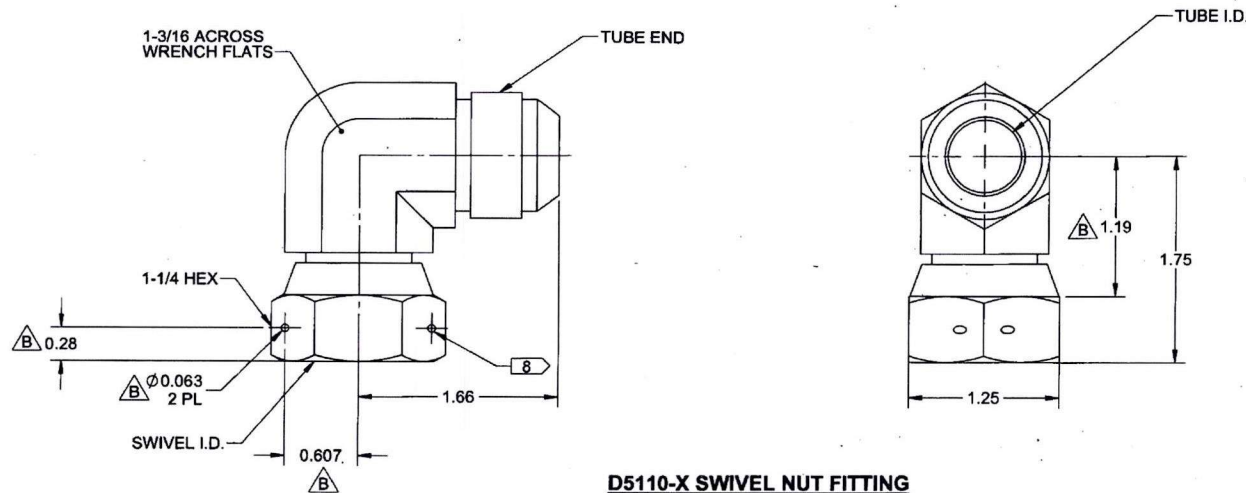
Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	12 C6X SS	12	0	0

Part Specifications					
Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Swivel Nut Fitting	0.280Inches $\pm$ 0.030	0.310 0.250		
2	Swivel Nut Fitting	0.063Inches + 0.004 - 0.001	0.067 0.062	Diameter	
3	Swivel Nut Fitting	0.607Inches $\pm$ 0.010	0.617 0.597		

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SPECIFICATION CONTROL DRAWING



D5110-X SWIVEL NUT FITTING

DART PART NUMBER	VENDOR PART NUMBER	TUBE END	TUBE ID	SWIVEL END	SWIVEL ID	MATERIAL	POSSIBLE SUPPLIER	WEIGHT
D5110-1	12 C6X SS	1-1/16 - 12 UNF-2A	0.610	1-1/16 - 12 UNF-2A	0.610	316 SS	PARKER HANNIFIN	1.90 LBS

- NOTES:
- 1) SUPPLIER: SEE TABLE
 - 2) MATERIAL: SEE TABLE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: PER QSI 044 6.1
 - 7) WEIGHT: PER TABLE
 - 8) LOCKWIRE HOLES TO BE ADDED BY PRODUCTION

RELEASED
2016-08-04
ECN 16-622

APPROVED

B	ADDED LOCKWIRE HOLES	CC	16.06.20
A	NEW ISSUE	DB	14.04.24
REV.	DESCRIPTION	BY	DATE
DESIGN	DB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	CC		
CHECKED	AK	DRAWING NO.	REV. B
MFG. APPR.	JLM	D5110	SHEET 1 OF 1
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	SWIVEL NUT FITTING	NTS
DATE	16.06.20	COPYRIGHT © 2014 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

PO042310



Supplier: AVI002-VU
Aviall
PO BOX 842267
Dallas, TX 75284-2267 USA
Phone: 905-676-1695
Fax: 905-676-9046

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO042310

PO Date: 1/17/19

Due Date: 2/25/19

**Purchase Order
Revision:**

Revision Date:

Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

E-MAILED
JAN 17 2019

Items

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	188612	12 C6X SS		Swivel Nut Fitting D5110-1 As Per Dwg D5110 Rev. B	Firmed	-	2/25/19	12 pcs	0 pcs	12 pcs	\$132.97/pcs	\$1,595.64
												Grand Total: \$1,595.64

Order Notes

Procurement Quality Clauses
A005 RIGHT OF ENTRY
A016 PERSONNEL QUALIFICATION
A026 CERTIFICATION OF MATERIAL CONFORMANCE
A032 DOCUMENT SPECIAL REQUIREMENTS
A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS
A040 NOTIFICATION OF QUALITY ESCAPE
A041 QUALITY MANAGEMENT SYSTEM
A042 DART NOTIFICATION BY SUPPLIER
A043 RETENTION OF QUALITY DOCUMENTS

A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM

A049 SUPPLIER AWARENESS

CL
[Signature]

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

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PACKING LIST



DELIVERY NUMBER: 8006870043

ROUTE: US FedEx International Priority

PAGE:1 of 1
DATE:29JAN19
TIME:11:00:44
EMP:00000000
ORD TYP: ZOR 132
CURRENCY:USD
TERMS:Net 30

CUSTOMER PO:PO042310 ✓
ORDER NUMBER:1004767875
ORDER DATE:28JAN19

B 10003951
I DART AEROSPACE LTD
L 1270 ABERDEEN STREET
L HAWKESBURY ON K6A 1K7
T CANADA
O

S 10003951
H DART AEROSPACE LTD
I 1270 ABERDEEN STREET
P HAWKESBURY ON K6A 1K7
T CANADA
O

S 1000
H AVIALL CENTRAL WAREHOUSE
I DALLAS CDC
P 2750 REGENT BLVD
F DALLAS TX 75261
R USA
O

LINE	PO LINE	MFG	ITEM DESCRIPTION	ORDER QUANTITY	SHIP QUANTITY	QUANTITY BACK ORDER	UOM	CUSTOMER PRICE	EXTENDED CUSTOMER PRICE
00010	0	74	12C6XSS ✓ ELBOW: TUBE,SWIVEL,NUT,ST	12 ✓	12	0	EA	132.97	1,595.64
			BATCH 7365082466		12				

This is not an Invoice.
For payment processing, please refer to Invoice.

The recipient of these goods agrees to comply with all export regulations governing the transfer, sale, lease, or use of these goods.
Diversion contrary to U.S. Law is prohibited.

CERTIFICATE OF CONFORMANCE

It is hereby certified that Aviall Services, Inc., is an approved distributor and meets all requirements of ISO9001, AS9100, AS9120 and AC 00-56 at 2750 Regent Blvd. DFW Airport, Texas. The products, articles or parts referenced on this document are in new or overhauled condition and were purchased from an approved source (FAA, EASA, TCCA, Mil Spec or Commercial). The Original Manufacturers' Certifications are maintained on file at our central office location, and copies are available upon request or at Aviall.com. For overhauled or repaired products, articles or parts, the original FAA 8130-3 / EASA Form 1 (Return to Service) or Yellow Tag, from the FAA/JAA/EASA approved Air Agency are attached to the component.

29JAN19
Date

DISCOUNT TERMS APPLY ONLY TO SUB TOTAL. ALL
RETURNED MERCHANDISE SUBJECT TO HANDLING
FEE.
THIS IS TO CERTIFY THAT AVIALL HAS COMPLIED WITH
THE PROVISIONS OF THE FAIR LABOR ACT OF 1938
AMENDED.

CUSTOMER COPY

Fire fighters should wear self-contained breathing apparatus. Burning nickel metal hydride batteries can produce toxic fumes including oxides of nickel, cobalt, aluminum, manganese, lanthanum, cerium, neodymium, and praseodymium.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

To cleanup leaking batteries:

Ventilation Requirements: Room ventilation may be required in areas where there are open or leaking batteries.

Eye Protection: Wear safety glasses with side shields if handling an open or leaking battery.

Gloves: Use neoprene or natural rubber gloves if handling an open or leaking battery.

Battery materials should be collected in a leak-proof container.

SECTION 7 - HANDLING AND STORAGE

Storage: Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life.

Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your Energizer Battery Manufacturing, Inc. representative for precautionary suggestions. Batteries normally evolve hydrogen which, when combined with oxygen from the air, can produce a combustible or explosive mixture unless vented. If such a mixture is present, short circuits, high temperature, or static sparks can cause an ignition.

Do not obstruct safety release vents on batteries. Encapsulation (potting) of batteries will not allow cell venting and can cause high pressure rupture.

Handling: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices.

If soldering or welding to the battery is required, consult your Energizer Battery Manufacturing, Inc. representative for proper precautions to prevent seal damage or short circuit.

Do not open battery. The negative electrode material may be pyrophoric. Should an individual cell from a battery become disassembled, spontaneous combustion of the negative electrode is possible. This is much more likely to happen if the electrode is removed from its metal container. There can be a delay between exposure to air and spontaneous combustion.

Charging: This battery is made to be charged many times. Because it gradually loses its charge over a few months, it is good practice to charge battery before use. Use recommended charger. Improper charging can cause heat damage or even high pressure rupture. Observe proper charging polarity.

Labeling: If the Energizer label or package warnings are not visible, it is important to provide a package and/or device label stating:

WARNING: CHARGE ONLY WITH SPECIFIED CHARGERS ACCORDING TO DEVICE MANUFACTURER'S INSTRUCTIONS. DO NOT OPEN BATTERY, DISPOSE OF IN FIRE OR SHORT CIRCUIT - MAY IGNITE, EXPLODE, LEAK OR GET HOT CAUSING PERSONAL INJURY.

Where accidental ingestion of small batteries is possible, the label should state:

WARNING: (1) KEEP AWAY FROM SMALL CHILDREN. IF SWALLOWED, PROMPTLY SEE DOCTOR: HAVE DOCTOR PHONE (202) 625-3333 COLLECT. (2) CHARGE ONLY WITH SPECIFIED CHARGERS ACCORDING TO DEVICE MANUFACTURER'S INSTRUCTIONS. DO NOT OPEN BATTERY, DISPOSE OF IN FIRE OR SHORT CIRCUIT - MAY IGNITE, EXPLODE, LEAK OR GET HOT CAUSING PERSONAL INJURY.

SECTION 8 - EXPOSURE CONTROLS/ PERSONAL PROTECTION

Requirements: Not necessary under normal conditions.

Not necessary under normal conditions.

under normal conditions.

nditions.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.):	Solid object
Upper Explosive Limits:	Not applicable for an Article
Lower Explosive Limits	Not applicable for an Article
Odor	No odor
Vapor Pressure (mm Hg @ 25°C)	Not applicable for an Article
Odor Threshold	No odor
Vapor Density (Air = 1)	Not applicable for an Article
pH	Not applicable for an Article
Density (g/cm ³)	2.5 – 3.7
Melting point/ Freezing Point	Not applicable for an Article
Solubility in Water (% by weight)	Not applicable for an Article
Boiling Point @ 760 mm Hg (°C)	Not applicable for an Article
Flash Point	Not applicable for an Article
Evaporation Rate (Butyl Acetate = 1)	Not applicable for an Article
Flammability	Not applicable for an Article
Partition Coefficient	Not applicable for an Article
Auto-ignition Temperature	Not applicable for an Article
Decomposition Temperature	Not applicable for an Article
Viscosity	Not applicable for an Article

SECTION 10 – STABILITY AND REACTIVITY

Nickel metal hydride batteries do not meet any of the criteria established in 40 CFR 261.2 for reactivity.

SECTION 11 – TOXICOLOGICAL INFORMATION

Under normal conditions of use, nickel metal hydride batteries are non-toxic.

SECTION 12 – ECOLOGICAL INFORMATION

Issues such as ecotoxicity, persistence and bioaccumulation are not applicable for articles.

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable federal, state and local regulations. Appropriate disposal technologies include incineration and land filling. Nickel metal hydride batteries can also be collected as part of the Rechargeable Battery Recycling Corporation (RBRC) program. Visit www.RBRC.org for the nearest recycling center or call 1-800-8-battery for rechargeable battery recycling and disposal information.

SECTION 14 – TRANSPORT INFORMATION

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents. All original packaging for Energizer nickel metal hydride batteries has been designed to be compliant with these regulatory concerns.

Energizer nickel metal hydride batteries (sometimes referred to as "Dry cell" batteries) are not defined as dangerous goods under the IATA Dangerous Goods Regulations, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). Nickel metal hydride batteries are defined as dangerous goods under the IMDG code. For air and ground transportation, these batteries are not subject to the dangerous goods regulations as they are compliant with the requirements contained in the following special provisions.

Regulatory Body	Special Provisions
ADR	Not Regulated
IMDG	UN3496 SP 963
UN	Not Regulated
US DOT	49 CFR 172.102 Provision 130
IATA	UN 3496 SP A123 and A199
ICAO	Not Regulated

In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words "not restricted" and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

SECTION 15 - REGULATORY INFORMATION

Batteries marketed by Energizer Battery Manufacturing, Inc. are not classified as dangerous goods by the US Department of Transportation or the major international regulatory bodies and are therefore not regulated.

SARA/TITLE III - As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.

SECTION 16 - OTHER INFORMATION

None.

Article Information Sheet



Page 1 of 4
Alkaline Manganese Dioxide-Zinc Batteries

ARTICLE INFORMATION SHEET

This Article Information Sheet (AIS) provides relevant battery information to retailers, consumers, OEMs and other users requesting a GHS-compliant SDS. Articles, such as batteries, are exempt from GHS SDS classification criteria. The GHS criteria is not designed or intended to be used to classify the physical, health and environmental hazards of an article. Branded consumer batteries are defined as electro-technical devices. The design, safety, manufacture, and qualification of Energizer branded consumer batteries follow ANSI and IEC battery standards.

SECTION 1 - DOCUMENT INFORMATION

Product Name: Eveready / Energizer Battery

Document Number: 0318-Alk

Chemical System: Alkaline Manganese Dioxide-Zinc

Date Prepared: March 2018

Designed for Recharge: No

Valid Until: March 2021

Prepared by: Energizer

SECTION 2 - COMPANY INFORMATION

Energizer Brands, LLC
533 Maryville University Drive
St. Louis, MO 63141

Email for Information:
energizer@custhelp.com
www.energizer.com

SECTION 3 - ARTICLE INFORMATION

Description	Alkaline Manganese Dioxide-Zinc Battery
Use	Portable power source
Brand	ENERGIZER, EVEREADY
IEC Designation	Included but not limited to: LR8D425, LR03, LR6, LR14, LR20, 6LR61, LR1, 4LR25Y, 6LF22
Sizes	Included but not limited to: AAAA, AAA, AA, C, D, 9V, N, Lantern
Image	

Article Information Sheet



Page 2 of 4
Alkaline Manganese Dioxide-Zinc Batteries

SECTION 4 – ARTICLE CONSTRUCTION

IMPORTANT NOTE: The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGIH)	% / wt.
Graphite (CAS# 7782-42-5)	15 mg/m ³ TWA (total dust) 5 mg/m ³ TWA (respirable fraction)	2 mg/m ³ TWA (respirable fraction)	2-6
Manganese Dioxide (CAS# 1313-13-9)	5 mg/m ³ Ceiling (as Mn)	0.2 mg/m ³ TWA (as Mn)	30-45
Potassium Hydroxide (CAS# 1310-58-3)	None established	2 mg/m ³ Ceiling	4-8
Zinc (CAS# 7440-66-6)	15 mg/m ³ TWA PNOR* (total dust) 5 mg/m ³ TWA PNOR* (respirable fraction)	10 mg/m ³ TWA PNOC** (inhalable particulate) 3 mg/m ³ TWA PNOC** (respirable particulate)	12-25
Non-Hazardous Components Steel (iron CAS# 65997-19-5 Water, Paper, Plastic and Other	None established None established	None established None established	18-22 Balance

* PNOR: Particulates not otherwise regulated

** PNOC: Particulates not otherwise classified

All Energizer Alkaline Manganese Dioxide-Zinc have zero added mercury.

Applicable Battery Industry Standards

North America Standards	ANSI C18.1M Part 1	ANSI C18.1M Part 2	ANSI C18.4
International Standards	IEC 60086-1	IEC 60086-2	IEC 60086-5

SECTION 5 – HEALTH AND SAFETY

Ingestion: Do not induce vomiting or give food or drink. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (202-625-3333) collect day or night.

The following instructions apply to exposure of internal components.

Inhalation: Provide fresh air and seek medical attention.

Skin Contact: Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

Eye Contact: Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

SECTION 6 – FIRE HAZARD & FIREFIGHTING

In case of fire, it is permissible to use any class of extinguishing medium on these batteries or their packing material. Cool exterior of batteries if exposed to fire to prevent rupture.

Fire fighters should wear self-contained breathing apparatus.

Article Information Sheet



Page 3 of 4
Alkaline Manganese Dioxide-Zinc Batteries

SECTION 7 - HANDLING AND STORAGE

Storage: Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life.

Mechanical Containment: If potting or sealing the battery in an airtight or watertight container is required, consult your Energizer Brands, LLC representative for precautionary suggestions. Batteries normally evolve hydrogen which, when combined with oxygen from the air, can produce a combustible or explosive mixture unless vented. If such a mixture is present, short circuits, high temperature, or static sparks can cause an ignition.

Do not obstruct safety release vents on batteries. Encapsulation (potting) of batteries will not allow cell venting and can cause high pressure rupture.

Handling: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy through heating, and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices.

Soldering directly to a battery is not recommended. If welding to the battery is required, consult your Energizer sales representative for proper precautions to prevent seal damage or short circuit.

Charging: This battery is manufactured in a charged state. It is not designed for recharging. Recharging can cause battery leakage or, in some cases, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.

Labeling: The label acts as an electrical insulation for the battery can. Damage to the label can increase the potential for a short circuit.

WARNING: Do not install backwards, charge, put in fire, or mix with other battery types as it may explode or leak causing injury.
Replace all batteries at the same time.

SECTION 8 - DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable federal, state and local regulations. Appropriate disposal technologies include incineration and land filling.

SECTION 9 - TRANSPORT INFORMATION

In general, all batteries in all forms of transportation (ground, air, or ocean) must be packaged in a safe and responsible manner. Regulatory concerns from all agencies for safe packaging require that batteries be packaged in a manner that prevents short circuits and be contained in "strong outer packaging" that prevents spillage of contents. All original packaging for Energizer alkaline batteries has been designed to be compliant with these regulatory concerns.

Alkaline batteries (sometimes referred to as "Dry cell" batteries) are not listed as dangerous goods under the ADR European Agreement Concerning the International Carriage of Dangerous Goods by Road, the IMDG International Maritime Dangerous Goods Code, UN Dangerous Goods Regulations, IATA Dangerous Goods Regulations, ICAO Technical Instructions and the U.S. hazardous materials regulations (49 CFR). These batteries are not subject to the dangerous goods regulations provided they meet the requirements contained in the following special provisions.

Regulatory Body	Special Provisions
ADR	Not regulated
IMDG	Not regulated
UN	Not regulated
US DOT	49 CFR 172.102 Provision 130
IATA	A123
ICAO	Not regulated

All Energizer alkaline batteries are packed in such a way to prevent short circuits or the generation dangerous quantities of heat and meet the special provisions listed above. In addition, the IATA Dangerous Goods Regulations and ICAO Technical Instructions require the words "not restricted" and the Special Provision number A123 be provided on the air waybill, when an air waybill is issued.

For emergency information call ChemTel 1-800-526-4727 (North America) or 1-314-985-1511 (International).

Article Information Sheet



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Alkaline Manganese Dioxide-Zinc Batteries

SECTION 10 – REGULATORY INFORMATION

10A Battery

1. **SARA/ TITLE III:** As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.
2. **USA EPA Mercury Containing & Rechargeable Battery Management Act of 1996:** No mercury added
3. **EU Battery Directive 2006/ 66/ EC Amended 2013/ 56/ EU:** Energizer batteries are compliant with all aspects of the Directive

10B General

1. **CPSIA 2008:** Exempt
2. **US CPSC FHSA (16 CFR 1500):** Not applicable since batteries are defined as articles
3. **USA EPA TSCA (40 CFR 707.20):** Not applicable since batteries are defined as articles
4. **USA EPA RCRA (40 CFR 261):** Classified as non-hazardous waste per ignitable, corrosive, reactive or toxicity testing
5. **California Prop 65:** No warning required
6. **DTSC Perchlorate labeling:** No warning required
7. **EU REACH SVHC:** No REACH listed substances of very high concern are present above 0.01% w/w

10C Article Definitions

1. **OSHA Hazard Communication Standard, Section 1910.1200(c)**

SECTION 11 – GHS OTHER INFORMATION

None

Acronym Glossary

ANSI: American National Standards Institute
CPSC: Consumer Product Safety Commission
CPSIA: Consumer Product Safety Improvement Act
DTSC: Department of Toxic Substances Control
EPA: Environmental Protection Agency
FHSA: Federal Hazardous Substances Act
GHS: Globally Harmonized System for Hazard Communication
IEC: International Electrotechnical Commission
OSHA: Occupational Safety and Health Administration
RCRA: Resource Conservation and Recovery Act
SDS: Safety Data Sheet
SVHC: Substances of Very high Concern
TSCA: Toxic Substances Control Act

Energizer has prepared copyrighted Article Information Sheets to provide information on the different Eveready/Energizer battery systems. Batteries are articles as defined under the GHS and exempt from GHS classification criteria (Section 1.3.2.1.1 of the GHS). The information and recommendations set forth herein are made in good faith, for information only, and are believed to be accurate as of the date of preparation. However, ENERGIZER BRANDS, LLC MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.

PRODUCT SAFETY DATASHEET

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Nickel Metal Hydride Batteries
January 2017

PRODUCT SAFETY DATA SHEET**PRODUCT NAME:** Energizer Rechargeable Battery**Type No.:****Volts:****TRADE NAMES:** ENERGIZER Nickel Metal Hydride Battery**Approximate Weight:****CHEMICAL SYSTEM:** Nickel Metal Hydride**Designed for Recharge:** Yes**Document Number:** 12006-B

Energizer has prepared copyrighted Product Safety Datasheets to provide information on the different Eveready/Energizer battery systems. Batteries are articles as defined under the GHS and exempt from GHS classification criteria (Section 1.3.2.1.1 of the GHS). The information and recommendations set forth herein are made in good faith, for information only, and are believed to be accurate as of the date of preparation. However, ENERGIZER BATTERY MANUFACTURING, INC. MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM REFERENCE ON IT.

SECTION 1 - MANUFACTURER INFORMATION

Manufactured for:
Energizer Battery Manufacturing, Inc.
1359 Columbia Rd.
Westlake, OH 44145

Telephone Number for Information:
800-383-7323 (USA / CANADA)
Date Prepared: January 2017

SECTION 2 - HAZARDS IDENTIFICATION**GHS classification:** N/A**Signal Word:** N/A**Hazard Classification:** N/A

Under normal conditions of use, the battery is hermetically sealed.

Ingestion: Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

Inhalation: Contents of an open battery can cause respiratory irritation. Hypersensitivity to nickel can cause allergic pulmonary asthma.

Skin Contact: Contents of an open battery can cause skin irritation and/or chemical burns. Nickel, nickel compounds, cobalt and cobalt compounds can cause skin sensitization and an allergic contact dermatitis.

Eye Contact: Contents of an open battery can cause severe irritation and chemical burns.

Note: Nickel, nickel compounds, cobalt and cobalt compounds are listed as possible carcinogens by the International Agency for Research on Cancer (IARC) or National Toxicology Program (NTP).

SECTION 3 - INGREDIENTS

IMPORTANT NOTE: The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

MATERIAL OR INGREDIENT	PEL (OSHA)	TLV (ACGI H)	% / wt.
Aluminum (CAS# 7429-90-5)	15 mg/m ³ TWA (total dust) 5 mg/m ³ TWA (respirable fraction)	10 mg/m ³ TWA	< 2
Cobalt as cobalt metal (CAS# 7440-48-4) as cobalt oxide (CAS# 1307-96-6)	0.1 mg/m ³ TWA (as Co)	0.02 mg/m ³ TWA (as Co)	2.5-6.0

PRODUCT SAFETY DATASHEET

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Nickel Metal Hydride Batteries
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as cobalt hydroxide (CAS# 21041-93-0)			
Lithium Hydroxide (CAS# 1310-65-2)	None established	None established	0-4
Manganese (CAS# 7439-96-5)	5 mg/m ³ Ceiling	0.2 mg/m ³ TWA (as Mn)	< 3
Mischmetal including: Lanthanum (CAS# 7439-91-0) Cerium (CAS# 7440-45-1) Neodymium (CAS# 7440-00-8) Praseodymium (CAS# 7440-10-0)	15 mg/m ³ TWA (particulates not otherwise regulated-total dust) 5 mg/m ³ TWA (particulates not otherwise regulated- respirable fraction)	10 mg/m ³ TWA (particulates not otherwise classified- inhalable) 3 mg/m ³ TWA (particulates not otherwise classified-respirable)	< 13
Nickel as nickel hydroxide (CAS# 12054-48-7) as nickel oxide (CAS# 1313-99-1) as nickel powder (CAS# 7440-02-0)	1 mg/m ³ TWA (as Ni)	1.5 mg/m ³ TWA (as inhalable Ni) 0.2 mg/m ³ TWA (as inhalable Ni, insoluble compounds)	30-50
Potassium Hydroxide (CAS# 1310-58-3)	None established	2 mg/m ³ Ceiling	< 7
Sodium Hydroxide (CAS# 1310-73-2)	2 mg/m ³ TWA	2 mg/m ³ Ceiling	0-4
Zinc as zinc metal (CAS# 7440-66-6) as zinc oxide (CAS# 1314-13-2) as zinc hydroxide (CAS# 20427-58-1)	15 mg/m ³ TWA (total dust: zinc oxide) 5 mg/m ³ TWA (respirable fraction: zinc oxide)	10 mg/m ³ TWA (total dust: zinc oxide)	< 3
Non-Hazardous Components Steel (iron CAS# 65997-19-5) Water, Paper, Plastic and Other	None established None established	None established None established	14 - 18 Balance

SECTION 4 – FIRST AID MEASURES

Ingestion: Do not induce vomiting or give food or drink. Seek medical attention immediately. CALL NATIONAL BATTERY INGESTION HOTLINE for advice and follow-up (202-625-3333) collect day or night.

Inhalation: Provide fresh air and seek medical attention.

Skin Contact: Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

Eye Contact: Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

If fire or explosion occurs when batteries are on charge, shut off power to charger.

In case of fire where nickel metal hydride batteries are present, apply a smothering agent such as METL-X, sand, dry ground dolomite, or soda ash, or flood the area with water. A smothering agent will extinguish burning nickel metal hydride batteries. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving nickel metal hydride batteries can be controlled with water. When water is used, however, hydrogen gas may evolve. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended.